DOCUMENT RESUME

ED 318 571 PS 018 757

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TITLE Kindergarten Teachers' Beliefs and Practices.
PUB DATE 16 Apr 90
NOTE 48p.; Paper presented at the Annual Meeting of the American Educational Research Association (Boston, MA, April 16-20, 1990).
PUB TYPE Reports - Research/Technical (143) -- Speeches/Conference Papers (150)

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS *Beliefs; *Check Lists; Classroom Observation Techniques; Classroom Research; Classroom Techniques; *Educational Practices; Factor Structure; *Kindergarten; Measures (Individuals); *Preschool Teachers; Primary Education; Questionnaires; Teacher Attitudes; Test Construction; Test Reliability
IDENTIFIERS *Developmentally Appropriate Programs; *Teacher Rating Scale

ABSTRACT

The major objectives of this study were to: (1) develop a questionnaire based on the National Association for the Education of Young Children's 1986 guidelines for developmentally appropriate practice in early childhood education; and (2) use the questionnaire to obtain information regarding kindergarten teachers' beliefs and instructional activities. The measure developed was a 27-item Checklist for Rating Developmentally Appropriate Practice in Kindergarten Classrooms. The measure, composed of two scales, the Teachers' Beliefs Scale and the Instructional Activities Scale, was administered to 113 kindergarten teachers from 4 Southern states. Findings suggested that psychometric properties of the measure were encouraging; they revealed positive correlations between developmentally appropriate beliefs and activities and between developmentally inappropriate beliefs and activities. Factors of both scales were fairly strong and independent. Teachers characterized as more developmentally appropriate felt themselves to be more in control than did teachers characterized as less developmentally appropriate. It is concluded that the teacher questionnaire shows promise of being a useful instrument for the study of teachers' perceptions of their beliefs and practices. Results support the contention that a great deal of inappropriate practice occurs in kindergarten classrooms. (Author/RH)

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ED318571

Kindergarten Teachers' Beliefs and Practices

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Paper presented at the annual meeting of the American Educational Research Association, Boston, MA April 16, 1990

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Running Head: KINDERGARTEN TEACHERS'

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ABSTRACT

The major objectives of this study were to develop a questionnaire based on the NAEYC (1986) guidelines for developmentally appropriate practice in early childhood education and to use this questionnaire for obtaining information regarding kindergarten teachers' beliefs and practices. The Teacher Questionnaire containing two subscales, the Teachers' Beliefs Scale and the Instructional Activities Scale, was constructed and administered to 113 kindergarten teachers from four Southern states. In addition to encouraging psychometric properties, positive correlations were found between developmentally appropriate beliefs and activities (r = .63, p = .000) as well as between developmentally inappropriate beliefs and activities (r = .71, p = .000). The more developmentally appropriate teachers felt more in control than did the developmentally inappropriate teachers. The Teacher Questionnaire shows promise of being a useful instrument for the study of teachers' perceptions of their beliefs and practices. The information obtained supports the contention that there is a great deal of inappropriate practice prevalent in today's kindergartens.

Key Words/Phrases: Kindergarten practices, Teacher beliefs, Teacher practices, Teacher empowerment, Beliefs and practices, Teacher questionnaires.

KINDERGARTEN TEACHERS' BELIEFS AND PRACTICES

The publication of guidelines for developmentally appropriate early childhood educational practices by the National Association for the Education of Young Children (NAEYC, 1986) served as an impetus to develop a means for identifying kindergarten teachers who value and exemplify such practices and those who do not. It was decided to construct a questionnaire that could be used for this purpose. This article describes the development and characteristics of The Teacher Questionnaire and the information obtained from administration of the questionnaire to 113 kindergarten teachers.

BACKGROUND LITERATURE

The background literature which supports our study falls into three categories: pressure for inappropriate practices and its effects, attempts to provide a definition and rationale for appropriate practices, and previous research relevant to measurement and comparison of teachers' beliefs and practices.

Pressure For Inappropriate Practices.

There is widespread concern among early childhood educators regarding the effects on young children of developmentally inappropriate instructional practices. Charlesworth (1989) describes the national concern regarding the steady increase in the frequency of kindergarten failure as the first grade curriculum is pushed down into kindergarten. The developmental view of fitting the curriculum to the child is losing ground to trying to fit the child to the curriculum. A special issue of

the Early Childhood Research Quarterly (Gallagher & Sigel, 1987), "Hothousing of young children", is devoted to this problem. In 1987, the National Association of Early Childhood Specialists in State Departments of Education published their concerns regarding inappropriate kindergarten practice (NAECSDE, 1987). In October 1988, the National Association of State Boards of Education (NASBE) issued a task force report on early childhood education that was concerned with appropriate educational programs for young children (Schultz & Lombardi, 1989). The report's recommendations are congruent with NAEYC's (Bredekamp, 1987).

Attempts To Define and Provide a Rationale For Appropriate Practices.

Besides the extensive guidelines for developmentally appropriate/inappropriate practice provided by NAEYC (Bredekamp, 1987), other organizations have also stated their positions regarding appropriate early childhood education. The Southern Association on Children Under Six (SACUS, 1984), The Association for Childhood Education International (ACEI) (Moyer, Egerston, & Isenberg, 1987), and the International Reading Association (IRA, 1986) have all issued statements supporting developmentally appropriate practices.

It is important to try to find out if early childhood teachers have adopted extremely inappropriate practices and if they actually value these practices or have adopted them under duress (as described by Seefeldt & Barbour, 1988). Before describing how we have attempted to get at teachers' beliefs and

practices, we will briefly review previous research in this area.

Previous Research

Spodek (1988a) calls our attention to the need to better understand the role of teachers' implicit theories in guiding instruction. Implicit theories are the ideas about instruction that teachers develop from their personal experience based on their practical knowledge. According to Spodek, they differ from the explicit theories of the profession which are taught in education and child development courses and espoused in professional meetings and literature. Research into teachers' thought processes, and specifically their implicit theories and beliefs, is a relatively new area of inquiry with relatively little information available (Clark & Peterson, 1986; Feeney & Chun, 1985; Spodek, 1988a). However, it is being increasingly recognized that the psychological context of teaching, that is the beliefs teachers have regarding what is important and not important and how these beliefs affect their students, is critical in trying to understand the genesis of teachers' actions in planning, teaching, and assessing. Further, beyond the immediate classroom, knowledge of teachers' values may help us to compare and understand why teachers, administrators, and curriculum developers frequently are not in harmony in the implementation of curriculum innovations. The section following reviews research on early childhood teachers' beliefs and the relationships of beliefs to practices.

Research with preschool teachers.

Spodek (1988a), in his review of research on the implicit theories of early childhood teachers, points out how teachers teaching at the same age level, with similar background training, and even teaching in the same school may have different implicit theories. Data obtained by Spodek (1988b) from observations of and interviews with early childhood teachers, reflected beliefs that focused on classroom management, instructional processes, and planning and organization. Very little attention was given to learning, development, and play which are usually considered the core of early childhood education. Preschool teachers differed from kindergarten and primary teachers in focusing more of their beliefs on play and in not mentioning evaluation. None of the teachers mentioned developmental or learning theories.

Verma and Peters (1973) developed a Teacher Beliefs Rating Scale (TBRS) based on Operant and Piagetian theoretical points of view. Parallel to the TBRS they developed a Teacher Practices Observation Form (TPOF). When administered to teachers in programs that were designed to follow either Piagetian or Operant principles the teachers' beliefs and practices were consistent. However, when the measures were used with 38 day care teachers from a variety of programs they tended to agree with Piagetian oriented beliefs in responding to the questionnaire, but their teaching practices were more in line with Operant Theory. Only two of the teachers had practices that were consistent with their beliefs.

Porter (cited in Porter & Potenza, 1983) looked at beliefs and practices using a case study approach that included participant observations and unstructured interviews. She studied five preschool teachers nominated by peers as being successful and examined their beliefs in relation to three types of theoretical orientations: maturationist, behavorist, or cognitive-developmental. The teachers' responses were verbalized in terms of personal values. Although the teachers didn't use theoretical terminology in speaking about their beliefs, the beliefs could be placed in the three theoretical categories.

Wing (1989) examined the relationship between preschool teachers' and their students' beliefs about reading and writing. Two preschool directors were interviewed in order to obtain their views regarding reading and writing. One school was a Montessori school and the other followed a constructivist philosophy. The Montessori curriculum developed reading and writing from the specific to the general, stressing discrete skills. The constructivist school used a more holistic approach which provided many literacy opportunities of an informal nature. Observations in the classrooms confirmed that the instruction was consistent with the directors' beliefs. Ten children from each classroom were interviewed regarding their views of reading and writing. The children's responses were consistent with their programs. Children from the Montessori school described literacy in terms of letters, sounds, and words. Children from the holistic program described literacy in terms of books and

stories, functions, and processes. In this case, teachers with strongly held, clearly articulated beliefs were able to influence their students' views to coincide with teacher theory.

The results from the investigations described indicate that unless teachers are educated to teach within a strong theoretical framework attached to specific classroom practices, it is very likely that teacher beliefs will not be congruent with practices. Further, most preschool teachers' beliefs are expressed in nontheoretical personal value terminology rather than in the terminology of child development/early childhood education theory.

Research with kindergarten teachers.

Spodek (1988b) found that kindergarten teachers, like preschool teachers, emphasized classroom management, instructional processes, and planning and organization in stating their theories of instruction. However, they differed from preschool teachers in placing less emphasis on play and more on work in order to socialize the children into elementary school. Kindergarten teachers also based their theories on personal values and experience rather than theory.

Smith and Shepard (1988) investigated kindergarten teachers' beliefs and practices relative to readiness and retention. From interviews with 40 teachers they extracted the construct of nativism as being a key element in teachers' beliefs about retention and readiness. Nativism at its extreme is a belief that "the development of school readiness is an internal,

organismic process unrelated to environmental intervention:" (p.314). This contrasts with the environmentalist view that readiness is "a process amenable to influence by parents, teachers and other forces in the child's environment" (p.314). Participant observations were done in six schools: three with low retention rates, two with high retention rates, and one with a developmental kindergarten and a transition class between kindergarten and first grade. It was found that the schools with high retention rates tended to be stringent in bureaucratic structure relative to teacher and child behavior and curriculum and to have teachers with nativistic beliefs. The schools with low retention rates were staffed by teachers with more environmentalist views, had more cooperative interaction between teachers in different grades, and had a nonbureaucratic organization. In these schools at the extremes, beliefs and practices were congruent.

Hatch and Freeman (1988) also looked at beliefs and practices regarding kindergarten. They interviewed a kindergarten teacher, a principal, and a kindergarten supervisor from each of 12 school districts in Ohio. On the whole they found practices to be strongly academic and not congruent with guidelines such as those from NAEYC (Bredekamp, 1987) and IRA (1986). In contrast, they found beliefs about what kindergarten should be to be more in line with NAEYC and IRA guidelines. More than half of the respondents held maturationist or interactionist philosophies while teaching in or supervising behaviorist

oriented programs.

As with the preschool studies, it is evident that when classrooms at the extremes are selected for study, teachers' beliefs and practices tend to coincide. When a cross section of educators are studied inconsistencies between beliefs and practices are more likely to be evident. The paucity of research on kindergarten teachers' beliefs and practices supports the need for further investigation. It would be of value to know if, with a larger, more diverse sample, there is the widespread use of inappropriate practices as indicated by Hatch and Freeman (1988) and if there is a large degree of inconsistency between self reported beliefs and practices as found by both Verma and Peters (1973) and Hatch and Freeman (1988). It would also be valuable to know more regarding how much in control teachers feel in planning and implementing instruction. As evident in the Hatch and Freeman study and as pointed out by Seefeldt and Barbour (1986), state and local mandates and supervisor and principal beliefs may conflict with teachers' implicit theories.

RESEARCH OBJECTIVES

The overall goal of this research was to obtain information on kindergarten teachers' self reported beliefs and practices. The following objectives were established:

1. Develop a questionnaire to:
    a. Identify the degree to which kindergarten teachers' beliefs are congruent with the NAEYC guidelines for appropriate/inappropriate

instructional practices for four- and five-year-olds (NAEYC, 1986).

b. Survey kindergarten teachers' perceived frequency of the use of specific appropriate/inappropriate practices incorporated in their instructional programs.

c. Find out which forces teachers perceive are in control of their instructional decision making.

2. Administer the questionnaire to a sample of kindergarten teachers in order to:

a. Establish the psychometric properties of the questionnaire.

b. Use a researcher developed observational checklist in a subsample of classrooms to validate the questionnaire results.

c. Compare the consistency of beliefs and practices as reflected in the teachers' responses.

d. Determine which beliefs about instructional practices this sample of kindergarten teachers perceives as important/not important.

e. Determine the frequency with which this sample of kindergarten teachers offer specific appropriate/inappropriate instructional activities.

f. Obtain information on which forces these kindergarten teachers perceive as controlling

their planning and instruction.

METHOD

This section describes the development, description, and the administration of the questionnaire and the plan for analysis of the responses.

Development and Description of the Teacher Questionnaire.

The Teacher Questionnaire was developed using the "NAEYC Position Statement on Developmentally Appropriate Practice in Programs for 4- and 5- Year-Olds" as originally published (1986) and later included in Bredekamp, 1987. The questionnaire was revised and reviewed by the researchers and administered to graduate and undergraduate University students in early childhood methods classes for feedback and further revision. The final draft of the questionnaire contained three sections. Respondents provided demographic information regarding their education and teaching experience. They also estimated the percentage of influence each of the following have on their planning and implementation of instruction: parents, parish or school system policy, principal, teacher (themselves), state regulations, and other teachers. They were asked to assign the percentages so that the sum of all six categories was 100%.

The major portion of the questionnaire consisted of two sub-scales: The Teacher Beliefs Scale (TBS) and the Instructional Activities Scale (IAS). The Teacher Beliefs Scale contained 30 items regarding teachers beliefs and the Instructional Activities Scale contained 31 items designed to inventory actual

instructional practice. The items represented several areas of kindergarten instruction as specified in the NAEYC guidelines (NAEYC, 1986): curriculum goals, teaching strategies, guidance of socioemotional development, language development and literacy, cognitive development, physical development, aesthetic development, motivation, and assessment of children. It must be noted that there is not a one-to-one correspondence between the items on the two subscales. Many of the beliefs statements are very general, while all the practices are specific activities.

Each Teachers' Beliefs Scale item was followed by a five point Likert scale such as the following sample items:

1	2	3	4	5
Not Important At All	Not Very Important	Fairly Important	Very Important	Extremely Important

It is _____ for kindergarten activities to be responsive to individual differences in development. 1 2 3 4 5

It is _____ for kindergartners to learn through active exploration. 1 2 3 4 5

It is _____ for children to be involved in establishing rules for the classroom. 1 2 3 4 5

It is _____ for children to color

within predefined lines. 1 2 3 4 5

Each Instructional Activities Scale item was followed by a five point Likert scale such as the following sample items:

1	2	3	4	5
Never or Almost Never (less than monthly)	Rarely (monthly)	Sometimes (weekly)	Regularly (semiweekly)	Very Often (1-3 times daily)

building with blocks	1	2	3	4	5
children selecting centers (home, book, math, writing, etc.)	1	2	3	4	5
participating in dramatic play	1	2	3	4	5
children reading in ability level groups	1	2	3	4	5

Administration of the Questionnaire.

Subjects.

The questionnaire was administered to 113 kindergarten teachers in 4 southern states. Teachers were selected on the basis of accessibility to the researchers from both public school districts and private schools. Subjects' teaching experience ranged from 1 year to 26 years. The majority of the teachers had bachelors degrees (75), 25 had a masters degree, 9 had a masters

plus 30 hours, 1 had an Education Specialist certificate, 2 were high school graduates with no college degree, and 1 gave no information.

Procedure.

The questionnaires and a self addressed stamped return envelope were hand delivered to the principals. The person who delivered the materials reviewed with the principal the purpose of the research and procedures for distributing, collecting, and returning the questionnaires.

Questionnaire items were counterbalanced across three versions of each measure to control for item order effects. These three versions, as well as order of presentation of the questionnaires, were randomized across the 113 kindergarten teachers who agreed to participate.

The Checklist for Rating Developmentally Appropriate Practice in Kindergarten Classrooms

The Checklist for Rating Developmentally Appropriate Practice in Kindergarten Classrooms is a 27 item observational instrument developed to determine the accuracy of individual teacher's questionnaire responses. Items were constructed corresponding to the NAEYC guidelines for children ages 5-8 (Bredekamp, 1987). Areas included were Curriculum Goals, Teaching Strategies, Integrated Curriculum, Guidance of Social-Emotional Development, Motivation, Parent-Teacher Relations, Evaluation, and Transitions. Each item in the questionnaire was rated on a 5 point Likert Scale. the most appropriate practice

descriptors were listed under 5 and the most inappropriate under 1. Observers were instructed to check 5 if practice was close to 100% appropriate on the item, 4 if practice was more appropriate than inappropriate, 3 if the split was fairly even, 2 if more inappropriate than appropriate, and 1 if close to 100% inappropriate.

Four independent observers rated each of four kindergarten classrooms all located in the same school. The classrooms were selected on the basis of the principal's interest in the research and the teachers' willingness to be observed. Each observer spent two thirty minute morning time blocks in each of the classrooms. During the observations, occurrences of practices on the checklist were noted. Following the two observations they independently rated each of the checklist practices observed. The observers met, compared practices observed, and arrived at a consensus rating. Not all categories were observed during the limited times for observation. Composite ratings were arrived at for Goals, Teaching Strategies, Curriculum, Guidance, Motivation, and Transitions. These ratings were averaged to arrive at an overall classroom score.

Analyzing the Responses

To assess the factorial validity of the measures, a factor analysis was conducted. Factor scores for use in subsequent analyses were created by summing across items composing each factor (see Tabachnick & Fidell, 1983). Correlational analysis was used to explore relationships between teachers' perceptions

of their own beliefs and practices. Descriptive elements of the response distributions on each of the scales were examined to ascertain any patterns which might emerge regarding values for each belief and frequency of making the various activities available. Correlational analyses were conducted to explore relations between four global measures (described later) of appropriate and inappropriate beliefs and practices and the six proportional indices representing teachers perceptions of control and influence. Finally, the 102 teachers who completed the control portion of the questionnaire were classified into various beliefs and practices groupings by performing median splits on four global measures which were composed of combined appropriate and combined inappropriate factor scores. A series of 2 X 2 factorial analyses of variance were conducted on the six indices of teacher control/influence.

RESULTS

The results will be described relative to each of the research objectives: the psychometric properties of the two questionnaire scales, the comparison of beliefs and practices, a description of the importance of the beliefs and practices, a description of the importance of the beliefs and the frequency of the availability of the activities, and a description of the relationships between degree of developmental appropriateness/inappropriateness of beliefs and practices and forces perceived to control planning and instruction.

Psychometric Properties of the Teacher Questionnaire

Psychometric Properties of the Teacher Beliefs Scale

Item means (see Table 1) ranged from 2.08 to 4.69 (average SD = .82). The factor analysis produced four reliable factors with Eigenvalues greater than one accounting for 64% of the item variance which, when rotated (varimax) to simple structure, yielded moderate to high item loadings (ranging from .40 to .80) on the designated factors and no substantial cross loadings.

Insert Table 1 about here

Two of the four factors were developmentally appropriate beliefs and two developmentally inappropriate beliefs. The designated teacher descriptors for each of the four factors were: (I) developmentally appropriate (child selected activity, invented spelling, etc.), (II) inappropriate materials and management (workbooks, flashcards, and evaluation by worksheets), (III) appropriate positive teacher/child relationship (self-esteem, positive child/adult interaction, etc.), and (IV inappropriate literacy activities (standardized testing, forming letters on lines, etc.). Subscale reliability was assessed by Cronbach's alpha. Moderate levels of internal consistency were obtained for items comprising these four factors (.85, .80, .68, and .74, respectively).

Psychometric Properties of the Instructional Activities Scale

Similar analyses were conducted for the Instructional Activities Scale. Results are summarized in Table 2. Means

range from 2.05 to 4.84 (average SD = 1.10). The factor analysis produced six factors containing Eigenvalues from 1.05 to 4.71 accounting for 65% of the item variance which, after rotation, yielded item loadings (ranging from .35 to .86) on the designated factors and no substantial cross loadings (see Table 2). Three factors included developmentally appropriate activities and three developmentally inappropriate activities. The designated factor descriptors for this measure were: (I) developmentally appropriate materials, choice making, and pacing (games and puzzles, manipulatives, center selection, etc.), (II) developmentally inappropriate literacy activities (chalkboard, write on lines, etc.), (III) appropriate creative/explorative learning (music, creative writing, etc.), (IV) inappropriate rote learning (rote counting, rote alphabet, etc.), (V) appropriate art activities (art, free cutting), (VI) inappropriate teacher directed learning/control (sitting 15 minutes, large groups, worksheets, losing privileges). Low to moderate levels of internal consistency were obtained for items comprising these six factors as measured by Cronbach's alpha (.60 to .75).

Insert Table 2 about here

Insert Table 3 about here

Comparison of questionnaire results and classroom observations.

Classroom observations indicated that two of the four teachers fell on the appropriate side of the scale (TA, M = 3.6; TB, M = 3.05) and two on the inappropriate side of the scale (TC, M = 2.3; TD, M = 1.5). Questionnaire factor scores were created by summing across items composing each factor (see Tabachnick & Fidell, 1983). The scores were then transformed to standardized scores. Comparing the observational ratings with questionnaire standardized scores the patterns for the beliefs were fairly congruent with classroom ratings. These scores can be examined in Table 3. That is, on Factor I (Appropriate Beliefs) the two more appropriate teachers were above the mean, and the others below the mean. On Factor II (Inappropriate Materials and Management) the two more inappropriate teachers were above the mean and the others below the mean. On Factor II (Inappropriate Materials and Management) the two more inappropriate teachers were above the mean and the more appropriate below. On Factor III (Appropriate Positive Teacher/Child Relationships) the most appropriate teacher was above the mean, the more inappropriate teachers were near the mean, and one of the more appropriate teachers was below the mean. On Factor IV (Inappropriate Literacy Activities) the two more appropriate teachers were below the mean. One of the more inappropriate teachers was above the mean and the other below, but not as far from the mean as the more appropriate teachers.

Comparing the observational ratings with the frequency with

which the teachers reported offering appropriate and inappropriate activities all four were congruent on Factor III (Creative/Exploratory Learning). Teachers A, B, and C were consistent in their placement on Factors I, II, V, and VI. Teacher D reported offering more appropriate activities than observed in her classroom. Factor IV (Rote Learning/Teacher Controlled Activities) did not follow the pattern for the classroom observation ratings. One more appropriate and one less appropriate teacher were above the mean while one more appropriate teacher was below the mean and the other more inappropriate teacher was at the mean.

Overall classroom practices observation ratings fit most closely with the teachers relative beliefs about what is important in the classroom. For all four teachers reported frequency of offering Active/Exploratory learning fit with the classroom observation ratings. Three of the four teacher's observed practices were consistent with their questionnaire responses on four out of the five other factors. One teacher reported much more frequent availability of appropriate activities than observed in her classroom.

Relationships of Beliefs and Practices

To achieve parsimony in some of the following analyses, four global measures of developmentally appropriate and inappropriate beliefs and practices were created by summing scores on items representing each appropriate and inappropriate domain. Specifically, all items that loaded on the 2 developmentally

appropriate beliefs factors were summed separately from items loading on the 2 developmentally inappropriate beliefs factors. Likewise, items that loaded on the 3 developmentally appropriate activities factors were summed separately from items loading on the 3 developmentally inappropriate activities factors.

Correlational analyses were used to explore relations between teacher's perceptions of their own beliefs and practices. Results indicated that developmentally appropriate beliefs were moderately correlated with developmentally appropriate practices (r = .63, p = .000). A somewhat stronger relationship was found between teacher's developmentally inappropriate beliefs and inappropriate practices (r = .71, p = .000).

Importance of Beliefs and Frequency of Availability of Activities

Examination of the frequency distributions for the beliefs and activities responses provides further insight into the relationship between beliefs and practices. Using the combined factor scores for the global measures, it can be seen that the developmentally appropriate beliefs and activities scores were more highly skewed (-1.789 and -1.074, respectively) than were the developmentally inappropriate beliefs and activities scores (-.106 and -.334, respectively). That is, the scores on the appropriate factors indicated that more teachers rated these beliefs as having some degree of importance (M = 4.26) than rated them as being relatively not important. More teachers also rated the appropriate activities as being available relatively frequent (M = 4.03). In contrast, the distributions for the inappropriate

beliefs and activities were less skewed with means near the center of the scale: inappropriate beliefs (M = 3.005) and inappropriate activities (M = 3.44).

Examination of frequency distributions for the individual beliefs revealed relatively little variation in the ratings for the appropriate beliefs with the exception of experimenting with writing and invented spelling, whereas most of the inappropriate beliefs responses were more widely distributed over the whole scale. Looking at the frequency distributions for the activities there were 11 available on a daily basis in a majority of the classrooms. Eight were appropriate: build with blocks (77.9%), children select centers (76.8%), listen to records and/or tapes (81.4%), games and puzzles (85%), sing/listen to music (82.3%), draw/paint (72.6%), manipulatives (83.2%), and social reinforcement (98.2%). Three were inappropriate: worksheets (67%), teacher directed large group activities (83.9%), and tangible rewards (63%). Eighty-five percent claimed to rarely or never have children wait more than five minutes. The inappropriate activities had a range of frequencies of availability: coloring or cutting predrawn forms, ability level reading groups, flashcards, rote counting, write on lines, recite alphabet, copy from chalkboard, sit longer than fifteen minutes, lose privileges, and use isolation as punishment. Seven appropriate activities had responses ranging over the whole scale: dramatic play, creative writing, measuring, exploring, clay/playdough, creative movement, and cut out their own shapes.

Planning and Instruction: Influences/Control

Results obtained from frequencies of percentages assigned by the 102 teachers who completed the influence/control portion of the questionnaire indicated that they viewed themselves as having the most influence (Mdn = 30%; R = 2-85%) with the school system second (Mdn = 25%, R = 3-95%). Other potential influences were principals (Mdn = 10%; R = 1-40%), state (Mdn = 10%; R = 3-90% with 90% at 50 or below), parents (Mdn = 5%; R = 1-50% with 96% at 20 or below), and other teachers (Mdn = 5%; R = 1-75% with 94% at 20 or below). Parents were viewed as having some influence by 70% of the teachers, the school system by 96%, the principal by 80%, the state by 87%, other teachers by 75%, and themselves by 99%.

Relationship between appropriateness/inappropriateness and control

Correlational analyses were conducted to explore relationships between each separate factor identified in the factor analyses and the six proportional indices representing teachers' perceptions of control/influence. These analyses were performed for the 102 teachers who filled out the influence portion of the questionnaire. The factor scores previously created by summing across items composing each factor (see Tabachnick & Fidell, 1983) were used for this analysis. Small but significant correlations were found between teachers' perceptions of the amount of control they had in planning and implementing instruction and the following factor scores:

developmentally appropriate activity beliefs, positive teacher-child relations beliefs, creative/exploratory learning activities, appropriate art activities, and inappropriate teacher directed learning/control practices (r's = .28, .26, .30, .30, and -.28, respectively; p's < .004).

Significant relationships were also discovered between teachers' perceptions of the amount of parent control and inappropriate literacy practices factor (r = .25, p < .01), the amount of perceived state control and the developmentally appropriate activity beliefs factor (r = -.21, p = < .05), and the amount of perceived other teacher influence and the inappropriate teacher directed learning/control factor (r = -.27, p < .004). No significant relationships emerged between the educational level of the teacher and the factor scores.

Differences between beliefs and practices groupings relative to control/influence

The groupings developed through median splits were categorized into the following groups. These groupings were derived from the four global measures described earlier. Groupings from the two appropriate beliefs and practices measures consisted of those teachers with more appropriate beliefs who used more appropriate practices, more appropriate beliefs and fewer appropriate practices, fewer appropriate beliefs and more appropriate practices, and fewer appropriate beliefs and fewer appropriate practices. Similar groupings were created using the two inappropriate beliefs and practices scores.

To explore group differences and interaction effects due to levels of appropriate and inappropriate beliefs and practices on teacher perceptions of control/influence, a series of 2 x 2 factorial analyses of variance were conducted on the six sources of teacher control/influence. Arc-sine transformations were applied to the control/influence proportions prior to analysis to control for the possibility of covariance between the means and variances of the proportional data (Winer, 1981, p. 399). Post hoc tests (simple effects) were used to dismantle interactions and analyze mean differences.

Significant main effects emerged in analyses of beliefs and practices groupings for effects of developmentally inappropriate practice on teachers' perceptions of parental control/influence $F(1, 98) = 5.98$, $p < .01$, and on teachers' perceptions of principal control/influence $F(1, 98) = 8.09$, $p < .006$. Mean differences indicated that teachers who used more developmentally inappropriate practices felt that parents had more influence over their teaching than did teachers who used fewer developmentally inappropriate practices ($M = .06$, $SD = .07$; $M = .04$, $SD = .05$, respectively). Similarly, teachers who used more developmentally inappropriate practices felt that principals had more influence than did teachers who used fewer developmentally inappropriate practices ($M = .11$, $SD = .08$; $M = .07$, $SD = .08$, respectively).

Significant main effects were also discovered in exploring the effects of developmentally appropriate beliefs and practices groupings on teacher perceptions of the proportion of influence

they themselves had over planning and implementing instruction $F(1,98) = 4.67$ and 2.93, respectively, $p < .05$. Teachers who had more developmentally appropriate beliefs felt that they had greater control over their teaching than did teachers with fewer appropriate beliefs ($M = .39$, $SD = .19$; $M = .28$, $SD = .20$, respectively). Likewise teachers who used more developmentally appropriate practices felt that they had more control over their teaching than did teachers who used fewer appropriate practices ($M = .38$, $SD = .21$; $M = .28$, $SD = .18$, respectively). One other significant main effect also emerged involving teachers' perception of other teachers' influence ($F1, 98) = 3.39$, $p = < .05$. Teachers with more developmentally appropriate beliefs felt that other teachers influenced their teaching more than did teachers with fewer developmentally appropriate beliefs ($M = .09$, $SD = .11$; $M = .06$, $SD = .07$, respectively).

A significant developmentally appropriate beliefs by developmentally appropriate practices interaction emerged from the analyses involving teacher perceptions of principal influence/control $F(1, 98) = 3.39$, $p < .05$. Simple effects anal ses revealed that teachers with more appropriate beliefs but fewer appropriate practices perceived that principals influenced them more than did teachers with more appropriate beliefs who used more appropriate practices ($M = .13$, $SD = .09$; $M = .07$, $SD = .07$, respectively). A similar pattern of findings was obtained in analyses involving inappropriate beliefs and practices $F (1, 98) = 2.85$, $p < .05$.

A developmentally inappropriate beliefs by developmentally inappropriate practices interaction was discovered in analyses involving teachers' perceptions of parental influence/control $F(1, 98) = 6.06$, $p = < .01$. Analyses of simple effects indicated that teachers with more inappropriate beliefs and more appropriate practices felt that parents influenced them more than did teachers with fewer inappropriate beliefs and more appropriate practices ($M = .08$, $SD = .10$; $M = .03$, $SD = .03$, respectively). No other significant main or interaction effects emerged from these series of analyses.

DISCUSSION

The questionnaire was developed and demonstrated good psychometric properties. The data collected using the questionnaire provided some interesting findings which will be discussed in sequence as reported in the previous section.

Psychometric Properties of the Questionnaire

The factors which emerged from both scales were fairly strong and independent. The factors were also conceptually logical. That is, the item clusters fit the NAEYC (1986) appropriate/inappropriate guidelines. This indicates that the teachers tended to be fairly consistent in their responses within each scale. Thus, the two questionnaire scales' cluster scores can be used as indicators of degree of appropriate/inappropriate beliefs and practices.

The classroom observation comparisons indicated that the beliefs scale (TBS) factors identified the relative placement of

the four teachers fairly accurately. The activities scale (IAS) was congruent with observed practice ratings for three out of four of the teachers. Since the beliefs scale was set up for degrees of importance, respondents could attach some importance to any of the beliefs and still place relative to others in a position congruent with their classroom practices. From the comments made to one of the researchers by the teacher who didn't practice what she preached, it is likely that she responded that her practices were what she believed the researchers wanted and not what she really did. Although the observations were done in only four classrooms, they do offer some support for the validity of the questionnaire scales. Further comparative observations need to be made in the future.

Comparison of Beliefs and Practices

The emergence of clearcut factors supported the creation of four global measures of appropriateness/inappropriateness by summing scores on the appropriate and inappropriate factors from each scale. This provided each teacher with four scores: appropriate and inappropriate beliefs and appropriate and inappropriate practices. The moderate, statistically significant positive beliefs and practices correlation reflects the skewed nature of the distributions. That is, most teachers viewed the appropriate beliefs as having some degree of importance and included some appropriate activities fairly frequently. The stronger relationship between inappropriate beliefs and inappropriate practices reflects the more nearly normal

distribution of responses on this scale. This may indicate that when it comes to inappropriate beliefs and practices teachers are more likely to practice what they state as their beliefs. This possibility is further supported by the examination of the frequency distributions for the individual beliefs and practices. The moderate nature of the correlations is consistent with the results of previous studies indicating that when a broad spectrum of teachers is sampled, beliefs and practices are found to be somewhat inconsistent.

The difference in the correlations between developmentally appropriate and inappropriate beliefs and practices may also be related to the availability of the appropriate activities. We have noted when observing in kindergarten classrooms that teachers may make appropriate activities available each day but limit access. For example, students may have to finish a mountain of workbook and worksheet activities before having an opportunity to go to the centers where they can explore more appropriate materials. Thus only the more capable, faster workers have access to these materials. In other classrooms appropriate materials are used, but only in large group activities. This usually means waiting for everyone to complete a task before moving on to the next, again placing a limitation on access. Teachers' responses to the inappropriate items may be better predictors of what is really going on in their classrooms than their responses to the appropriate items. These results are consistent with those found by Verma and Peters (1973) and Hatch

and Freeman (1988) who found stated beliefs more developmental than actual practice.

Control/influence and appropriate/inappropriate beliefs and practices

Overall teachers viewed themselves and the school system as having the greatest proportion of influence on their classrooms activities. If there was conflict it would appear to likely be between teacher desires and local school system mandates if they were different as suggested by Seefeldt and Barbour (1988) and found by Hatch and Freeman (1988). However, in looking at the individual distributions it is apparent that some teachers see the principal, the state, parents, and other teachers as having a strong influence on their practices although for most teachers the proportion is fairly small. These results can be compared with the second Gallup/Phi Delta Kappa poll of teachers' attitudes toward public schools (Elam, 1989). When a national sample of teachers were asked, "In your opinion who should have the greatest influence in deciding what is taught in the public schools of your community?", 36% responded teachers, 18% state government, 15% local school board, 11% principals and other administrators, 9% parents, and 4% federal government. Seven percent had no opinion. Many of our sample of teachers did view themselves as having the most control over what happens in their classrooms with varying amounts of lesser control from outside forces. On the other hand there were many who saw themselves overwhelmed by outside forces and only 27 viewed themselves as

having 50% or more control.

Overall these analyses indicate that the teachers who had the strongest appropriate beliefs and who offered appropriate activities most frequently also felt the most control over planning and implementing their instruction. The teachers who are more strongly inappropriate in their beliefs and practices view outside forces such as principals and parents as having more invluence on their planning and instruction. We can only speculate on some of the reasons for these differences. The more strongly appropriate may have educational backgrounds which were more child development oriented, may be people with stronger self concepts who stand up for their beliefs, and/or may have a clearer, better articulated theory underlying their practices.

The teachers with the less appropriate beliefs and practices may rely more on opinion in forming their implicit theories and thus turn to outside forces as the determinants of their instructional programs. Some of the more inappropriate teachers we visited told us that they "know better" but that the parents and/or the principal demanded that they use inappropriate activities. On the otherhand, we have also talked with teachers who firmly believe that the inappropriate activities and materials are "appropriate". Our results support the need for principals and parents to become educated regarding developmentally appropriate educational practices for young children.

Conclusions and Implications

The Teacher Questionnaire appears to be an instrument which can be used for research and inservice guidance to identify teachers who are more and less developmentally appropriate in their beliefs and practices. Some further work is need to refine the questionnaire for future use with kindergarten teachers. The NAEYC guidelines (1986) were a viable vehicle for guiding our questionnaire construction. Since the NAEYC guidelines for five- to eight-year-olds have been published (Bredekamp, 1987), the questionnaire can be modified to fit these guidelines. Some of the items which did not fall into the factor loadings can be discarded. To get at the control/influence aspect in a more specific fashion we plan to have future respondents rank the influence/control forces rather than estimate percentages. We also plan to do more classroom observations to confirm the reliability and validity of the scales.

The information obtained with the questionnaire has demonstrated that, as widely believed, the use of inappropriate practices is prevalent in the kindergartens sampled. We have already used it to identify two classrooms, one less appropriate and one more appropriate, in which we have observed student behavior and compared frequencies of stress exhibited in each (Burts, Hart, Charlesworth, & Kirk, 1989). We plan to use a revised questionnaire to identify teachers for a larger study. The results confirm the need for teacher, administrator, and parent education regarding developmentally appropriate practice and support the need for more teacher empowerment. The majority

of the teachers perceived that they had less than 50% control/influence over their teaching practices. Empowerment seems to be a strong element in supporting developmentally appropriate practices. This factor is consistent with the findings of Smith and Shepard (1988) in their study of kindergarten teachers beliefs and practices and rate of student retention.

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Table 1

Factor Structure* Eigenvalues, Cronbach's Alpha, Means, and Standard Deviations for the Teacher Beliefs Scale

		Appropriate I	Inappropriate II	Relationship III	Literacy IV	Item X	SD
I.	Developmentally Appropriate:						
	25 (Child dictates story	.69				3.99	.88
	29 (Invented spelling)	.67				3.34	1.09
	27 (Dramatic play)	.60				4.23	.78
	7 (Individual interests)	.57				4.36	.72
	26 (Functional print)	.50				3.88	1.03
	8 (Developmental differences)	.44				4.57	.62
	12 (Active exploration)	.44				4.69	.50
	10 (Child sel. of activities)	.45				4.19	.76
	11 (Active plan/participation	.44				4.25	.80
	3 (Eval. by observation)	.40				4.70	.56
	30 (Social skills)	.41				4.65	.54
II.	Developmentally Inappropriate Materials and Management						
	14 (Workbooks)		.79			3.10	.97
	4 (Eval. by workbooks)		.67			3.12	.95
	21 (Alphabet)		.58			4.06	.96
	15 (Flashcards)		.56			3.21	1.20
	19 (Punishment)		.54			3.09	1.16
	16 (Whole group act ivity)		.53			2.82	.94
	20 (Reasons for rules)		- .30			4.57	.65

Table 1 (continued)

		Appropriate I	Inappropriate II	Relationship III	Literacy IV	Item X	SD
III.	Appropriate Positive Teacher/ Child Relationship						
	28 (Child/adult interaction)			.62		4.36	.75
	17 (Teacher as facilitator)			.59		3.73	.49
	9 (Self esteem)			.47		4.83	.40
	24 (Reading stories)			.38		4.77	.49
IV.	Inappropriate Literacy Activities						
	23 (Letters on lines)				.69	2.69	1.04
	22 (Colors in lines)				.64	2.57	.93
	2 (Standardized tests)				.48	2.25	.96
	31 (Kindergarten reading emphasis)				.41	2.38	1.06
	EIGENVALUE	6.05	3.28	1.08	1.00		
	CRONBACH'S ALPHA	.85	.80	.68	.74		

^Loadings less than .30 have been omitted for the sake of clarity.

Table 2

Factor Structure*, Eigenvalues, Cronbach's Alpha, Means, And Standard Deviations For the Instructional Activities Scale

	A I	I II	Explor III	Rote IV	Art V	Control VI	Item X	SD
I. Developmentally Appropriate Materials, Choice making, and Pacing:								
39 (Games and puzzles)	.72						4.84	.44
47 (Manipulatives)	.61						4.79	.64
35 (Center Selection)	.59						4.57	.91
34 (Building)	.55						4.67	.81
59 (Child coordin. act.)	.47						4.25	1.07
57 (Waiting 5 min.)	-.35						2.05	1.22
II. Developmentally Inappropriate Literacy Activities								
55 (Chalkboard)		.75					2.26	1.45
53 (Write on lines)		.66					3.48	1.48
49 (Reading groups)		.58					3.05	1.77
51 (Flashcards)		.52					2.83	1.61
III. Appropriate Creative/Exploratory Learning								
42 (Music)			.73				4.81	.48
38 (Creative writing)			.57				3.25	1.30
45 (Creative movement)			.52				3.92	1.14
41 (Exploring)			.38				3.12	1.23
37 (Records)			.38				4.80	.45
IV. Inappropriate Rote Learning								
54 (Rote Alphabet)				.81			3.11	1.49
52 (Rote counting				.52			3.94	1.26
48 (Predawn)				.30			4.03	1.13

Table 2 (continued)

		A I	I II	Explor III	Rote IV	Art V	Control VI	Item X	SD
V.	Appropriate Art Activities								
	43 (Art)					.86		4.61	.71
	46 (Free cutting)					.42		3.97	.93
VI.	Inappropriate Direct Learning/Control								
	56 (Sitting 15 min)						.69	3.65	1.43
	58 (Large groups)						.55	4.67	.85
	50 (Worksheets)						.39	4.38	1.12
	61 (Losing privileges)						.37	3.49	1.41
	EIGENVALUE	4.71	2.93	1.68	1.17	1.09	1.05		
	CRONBACH'S ALPHA	.63	.75	.66	.60	.60	.60		

*Loadings less than .30 have been omitted for the sake of clarity.

A = Appropriate I = Inappropriate

Table 3

Teacher Questionnaire Factor Z Scores for Teachers Rated More or Less Appropriate Using the Classroom Observation Checklist

Factors	More Appropriate Teachers		Less Appropriate Teachers	
	A	B	C	D
Beliefs				
I. Developmentally Appropriate	1.22	1.04	-1.25	-0.72
II. Developmentally Inappropriate Materials and Management	-0.34	-0.79	2.14	0.11
III. Appropriate Postive Teacher/Child Relations	0.84	-0.84	.16	0.17
IV. Inappropriate Literacy Activities	-1.22	-1.56	1.50	-0.54

Table 3 (continued)

Practices					
I.	Developmentally Appropriate Materials, Choice Making, Pacing	0.63	0.63	-1.25	0.63
II.	Developmentally Inappropriate Literacy Activities	-0.77	-1.20	1.76	-0.77
III.	Appropriate Creative Exploratory Learning	1.05	0.08	-1.21	-0.88
IV.	Inappropriate Rote Learning	0.47	-0.47	0.00	0.47
V.	Appropriate Art Activities	0.85	0.85	-2.14	0.85
VI.	Inappropriate Teacher Directed Controlled Learning	0.25	-1.91	1.54	0.68